

We Claim:

1. A system for controlling a physiological function comprising

5 at least one electrode sized and configured to be located on, in, or near a targeted component of the pudendal nerve, and

10 a pulse generator adapted to be coupled to the electrode to apply an electrical signal at a selected frequency to stimulate the targeted component, the selected frequency comprising a first frequency or range of frequencies for achieving a first physiologic response and a second frequency or range of frequencies, different than the first frequency, for achieving a second physiologic response different than the first physiologic 15 response.

2. A system according to claim 1

wherein the pulse generator includes means for modulating the selected frequency to select either the first or second frequency or range of frequencies.

20 3. A system according to claim 1

wherein the electrode is sized and configured to be located on, in, or near the pudendal nerve, and/or its branch(es), and/or its spinal root(s).

4. A system according to claim 1

25 wherein the electrode is sized and configured to be located on, in, or near a urethral afferent of the pudendal nerve and/or afferent nerve fibers in the deep perineal nerve.

5. A system according to claim 1

30 wherein the electrode comprises a single electrode.

6. A system according to claim 1

wherein the electrode comprises a multiple electrode array.

35 7. A system according to claim 1

wherein the physiological function comprises at least one of controlling urinary incontinence and controlling micturition.

8. A method for controlling a physiological function comprising the steps of

placing at least one electrode on, in, or near a targeted component of the pudendal nerve, and/or its branch(es), and/or its spinal root(s),

applying an electrical signal to the electrode  
10 to selectively stimulate the targeted component, and selecting between a first frequency or range of frequencies to achieve a first desired physiologic response and a second frequency or range of frequencies to achieve a second desired physiologic response  
15 different than the first physiologic response.

9. A method according to claim 8  
wherein the targeted component comprises a urethral afferent of the pudendal nerve and/or afferent nerve fibers in the deep perineal nerve.

20 10. A method according to claim 8  
wherein the physiological function comprises one of controlling urinary incontinence and controlling micturition.

11. A system for controlling a physiological function of the lower urinary tract comprising  
25 at least one electrode sized and configured to be located on, in, or near afferent nerve fibers in the deep perineal nerve,

a pulse generator adapted to be coupled to the  
30 electrode to apply an electrical signal at a frequency to stimulate the afferent nerve fibers in the deep perineal nerve.

12. A system according to claim 11  
wherein the frequency comprising a first  
35 frequency or range of frequencies for controlling urinary

continence and a second frequency or range of frequencies, different than the first frequency, for controlling micturition.

13. A method for controlling a physiological  
5 function of the lower urinary tract comprising the steps  
of

placing at least one electrode on, in, or near  
afferent nerve fibers in the deep perineal nerve, and  
applying an electrical signal to the electrode  
10 to selectively stimulate the afferent nerve fibers in the  
deep perineal nerve.

14. A method according to claim 13  
further including the step of selecting  
between a first frequency or range of frequencies to  
15 control urinary continence and a second frequency or  
range of frequencies different than the first frequency  
to control micturition.

15. A system for controlling a physiological  
function comprising  
20 at least one electrode sized and configured to  
be located on, in, or near a targeted component of the  
pudendal nerve, and

25 a pulse generator adapted to be coupled to the  
electrode to apply differing electrical signals that vary  
according to frequency, and/or amplitude, and/or  
waveform, to stimulate the targeted component to achieve  
a physiologic response at different levels of  
effectiveness, the pulse generator including a function  
that permits selection of a desired level of  
30 effectiveness and that generates an electric signal  
according to the selection to achieve the physiologic  
response at the desired level of effectiveness.